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HELMINTHOLOGICAL ABSTRACTS

incorporating
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For the Year 1943.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

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NOTICE

The index pages to Helminthological Abstracts, Vol. xii, Part I, were numbered in error. It should be noted, therefore, that pp. 17—19 of Part I are to be discarded when the volume is bound up and that the present part begins with p. 17.

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INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY
FOR THE YEAR 1943.

Vol. XII, Parts 2 & 3.

49—Advisory Leaflet. Ministry of Agriculture and Fisheries. London.

- a. ANON, 1943.—“Earcockles of wheat.” No. 172, 2 pp. [Revision of leaflet published in 1933.]
- b. ANON, 1943.—“Diseases of the rabbit.” No. 316, 5 pp.
- c. ANON, 1943.—“Worms in poultry.” No. 317, 4 pp.

50—Agricultural Gazette of New South Wales.

- a. McCLYMONT, G. L., 1943.—“Control of internal parasites in pigs. The value of good hygiene.” 54 (5), 243.

51—American Journal of Hygiene.

- a. ROTH, H., 1943.—“The rôle of the intestinal phase of trichina infection in the establishment of immunity to reinfection.” 38 (1), 99-111.

(51a) Roth establishes the fact that a certain amount of resistance to muscular trichinosis is engendered by an intestinal infestation of either male or female adult worms. Sub-lethal doses of from 500 to 600 larvae, following purely intestinal infestations, resulted in from 0.1 to 86.0% of the average infestation of the corresponding controls. When lethal doses of 1,000 or 2,000 larvae were given all the controls died within 8 weeks but 44% of the immunized animals still lived and the muscular infestation was comparatively small. Both male and female larvae had this power of conferring resistance. Immunity to re-infection seems therefore to be a true acquired immunity which is initiated in the intestinal phase, but it may be much increased by the passage of larvae through the tissues. P.A.C.

52—American Journal of Pathology.

- a. WELLER, T. H., 1943.—“The development of the larvae of *Trichinella spiralis* in roller tube tissue cultures.” 19 (3), 503-515.

(52a) Weller has observed the development of *Trichinella* larvae through 3 moults to sexual differentiation in roller tube tissue cultures containing 8 to 10-day-old minced chick embryo tissue. Within half an hour the larvae moved rapidly through the tissue and prior to the first ecdysis, usually 24 to 36 hours after the culture was set up, decreased in length. After the first moult the larvae were again very active and became shorter and thicker, still showing no sexual differentiation. 10 to 20% of the total number of larvae completed the moult. The second ecdysis occurred 48 hours after inoculation. Retraction from a third sheath occurred frequently by the 50th hour. These larvae showed sexual differentiation, with development of vulva, ovary and uterus in the female, and of anal papillae in the male. By the 65th hour these larvae had begun to show degenerative changes in internal structure. There was also a retraction from a fourth sheath, thus showing that larvae of both sexes undergo 4 moults. Bacteriologically sterile larvae were obtained by a simple washing technique. M.R.Y.

53—American Journal of Roentgenology and Radium Therapy.

- a. YENIKOMSHIAN, H. A. & SHEHADI, W. H., 1943.—“Duodenal ulcer syndrome caused by ankylostomiasis. Report of twenty-five cases with gastric acidity and roentgenological studies.” 49 (1), 39-48.

54—American Journal of Tropical Medicine.

- a. RAPPAPORT, I., 1943.—“A comparison of three strains of *Trichinella spiralis*. I. Pathogenicity and extent of larval development in the musculature.” 23 (3), 343-350.
- b. RAPPAPORT, I., 1943.—“A comparison of three strains of *Trichinella spiralis*. II. Longevity and sex ratio of adults in the intestine and rapidity of larval development in the musculature.” 23 (3), 351-362.
- c. SUMMERS, W. A. & WEINSTEIN, P. P., 1943.—“*Diphylobothrium latum* in Florida.” 23 (3), 363-367.
- d. RECTOR, L. E., 1943.—“Factors influencing the reported incidence of appendiceal oxyuriasis.” 23 (3), 369-372.

(54a) Rappaport has carried out experiments to determine the variability of strains of *Trichinella*. Using mice, he found no difference in lethal dose of larvae, survival time of infested animals, or severity of infestation in the musculature, with 3 different strains of larvae. The method used is described in detail, and the necessity of accurate technique in quantitative examination is emphasized. Rappaport points out the limitations of lethal dose and survival time of animals when used as criteria in *Trichinella* investigations. A.E.F.

(54b) There is much less variation in the average numbers of *Trichinella* larvae recovered from infected animals after experimental infection with lethal doses than with small doses and there was similarly a greater regularity in the longevity of the adults. These usually disappeared from the small intestine after the first month but survived longer in the large intestine. None survived for longer than 54 days. Contrary to the generally accepted view the sex ratio is markedly changed in favour of the males after about the 18th day and thereafter males are often found alone. R.T.L.

(54c) *Diphylobothrium latum* is reported from 3 negro children and the family dog in the neighbourhood of Monticello, Jefferson County, Florida. None of the cases had ever been outside the vicinity of their homes and they caught and ate fish from nearby streams. From the 2 younger children 33 scolices were recovered by treatment with Oleoresin of Aspidium. R.T.L.

(54d) *Oxyuris vermicularis* was collected from 10 out of 210 appendices removed from individuals of ages ranging from 15 to 33 years at the Peoples Hospital, Akron, Ohio. One of the most important factors in variations of incidence is the thoroughness with which the contents of the appendix is examined. R.T.L.

55—American Naturalist.

- a. BALL, G. H., 1943.—“Parasitism and evolution.” 77 (771), 345-364.

(55a) Ball's presidential address to the Western Society of Naturalists is mainly a criticism of the view that a high degree of pathogenicity of a parasite may be considered *prima facie* evidence of a recent and still imperfect development of the host-parasite relation and, conversely, that a parasite relatively innocuous to its host is one that has been established in it for a very long time. He supports his thesis by numerous examples of host-parasite relationship drawn from the protozoa and some from helminths. T.G.

56—American Rose Annual.

- a. LYLE, E. W., 1943.—“Nematode resistance in rose understocks.” Year 1943, pp. 157-158.

(56a) Lyle describes the damage to roses caused by the root-knot nematode. Many understocks have been tested in attempts to find a resistant variety. One, a hybrid of *Rosa multiflora* × *R. blanda*, has shown a high degree of resistance, no signs of infection having appeared during three years of testing. This hybrid is a satisfactory understock. The species *R. setigera* is a less satisfactory stock but grows vigorously, even when severely infected with root-knot. M.T.F.

57—Anales del Instituto de Biología.

- a. BRAVO H., M., 1943.—“Dos nuevos nemátodos parásitos de anuros del sur de Puebla.” 14 (1), 69-78. [English summary p. 77.]
- b. BRAVO H., M., 1943.—“Estudio sistematico de los tremátodos parásitos de los ‘ajolotes’ de México.” 14 (1), 141-159. [English summary pp. 156-157.]

- c. CABALLERO y C., E., 1943.—“Tremátodos de las tortugas de México. III. Descripción de un nuevo género de la subfamilia Cladorchinae Fischöder, 1901 y redescrpción de *Dermatemytremata trifoliata* Price, 1937.” 14 (1), 161-172. [English summary p. 171.]
- d. CABALLERO y C., E., 1943.—“Tremátodos de los murciélagos de México. IV. Descripción de un nuevo género de la subfamilia Lecithodendriinae Looss, 1902, y una nueva especie de *Prosthodendrium* Dollfus, 1931.” 14 (1), 173-193. [English summary p. 192.]
- e. CABALLERO y C., E., 1943.—“Nematodos de los reptiles de México. VII. Acerca de la presencia de *Camallanus scabrae* MacCallum, 1918 en las tortugas de agua dulce, del sureste de México.” 14 (1), 195-200. [English summary pp. 199-200.]
- f. CABALLERO y C., E. & CERECERO, C., 1943.—“*Longistriata convoluta* n.sp. (Nematoda: Trichostrongylidae) parásito del intestino de una ‘tuza’ *Cratogeomys merriami* (Thomas).” 14 (1), 201-205. [English summary p. 204.]

(57a) Bravo redefines the nematode genera *Oxysomatium* and *Aplectana*, and describes the new species *A. itzacanensis* n.sp. from the intestine of *Scaphiopus multiplicatus*, and *A. hoffmanni* n.sp. from the intestines of *S. multiplicatus* and *Bufo marinus*: both agree in having a small hook-shaped piece on the inner edge of each of the three obscure lips, and the oesophagus separated from the bulb by a constriction. The nerve ring is at the middle of the oesophagus, and the excretory pore pre-bulbar. The vulva is posterior with an anterior ‘S’ shaped ovipositor, and the spicules have a hood-like tip. N.G.S.

(57b) A short redescription of *Megalodiscus temperatus* is given by Bravo from *Ambystoma tigrinum*, and a fuller study is made of the variations in *Gorgoderina attenuata* from the same host: there is a wide range in the relative positions, shape and lobulations of the testes, ovary and vitellaria. Two new species are described: *Phyllodistomum rhyacosiredonis* n.sp. from the urinary bladder of *Rhyacosiredon altamirani*, which is compared in a table with the related species *P. americanum*, *P. parasiluri*, *P. shandrai* and *P. noconis*. *Haematoleechus pulcher* n.sp. from the lungs of *Ambystoma tigrinum* has certain resemblances to *H. tumidus*. N.G.S.

(57c) In the intestine of *Dermatemys mawii*, Caballero has found a paramphistome belonging to a new genus: *Parachiorchis parviacetabulatus* n.g., n.sp. (Cladorchinae), in which there is a small terminal acetabulum, the genital pore behind the intestinal bifurcation, branched testes and a muscular cirrus pouch. The vitellaria are all extra-caecal. A redescription is given of *Dermatemytremata trifoliata* from the stomach of *D. mawii*, and an account of the eggs of *Octangioides tlacotalpensis* which contain a vermiform embryo. Immature specimens of *Choanophorus rovirosai* were also found in this host: these showed the atral appendages partly invaginated and not containing branches of the excretory system, and the developing genitalia are more posteriorly placed than in the adult. N.G.S.

(57d) Continuing his studies of the trematodes of bats from Mexico, Caballero redescrbes *Plagiorchis* (*Multiglandularis*) *muris* (Tanabe) from *Natalus mexicanus*, and gives a short account of *P. (Plagiorchis) vespertilionis* (Müller) from *Tadarida brasiliensis*. *Limatulium limatulium* (Braun) from *N. mexicanus*, and *L. scabrum* Caballero from *T. brasiliensis* are redescrbed, and the latter is shown to belong to the genus *Prosthodendrium*. A new species of this genus *P. emollidum* n.sp. was found in the intestine of *N. mexicanus*—it has some affinities with *P. naviculum* Macy, and *P. chilostomum* (Mehlis). *Ochoterenatrema labda* n.g., n.sp. (Lecithodendriinae) was found in *Tadarida brasiliensis* and *N. mexicanus*, and the new genus is distinctive in having the genital pore on the left lateral edge of the acetabulum, apart from the prostatic body. The ovary is lobed and the vitellaria are confined to the anterior-lateral triangular areas of the body. N.G.S.

(57e) Caballero re-examines *Camallanus scabrae* MacCallum from the intestine of *Dermatemys mawii* from Mexico, and considers that it is distinct from *C. microcephalus* (Duj.).—also confirming the opinion of Tornquist that the other North American species of this genus are conspecific with *C. scabrae*. The distinctive characters of the ridges of the buccal capsule, the tridents, and the caudal papillae are emphasized. N.G.S.

(57f) A new trichostrongyle, *Longistriata convoluta* n.sp., is described by Caballero & Cerecero from the intestine of *Cratogeomys merriami* from Michoacán, Mexico. It resembles *L. adunca* except in the absence of accessory male structures and the smaller spicules—their

tips distinguish it from *L. norwegica*. The Brazilian species *L. nematoderiformis*, *L. beta*, *L. gamma* and *L. delta* differ from it in the structure and disposition of the bursal rays. N.G.S.

58—Annals of Applied Biology.

- a. MILES, H. W., HENDERSON, V. E. & MILES, M., 1943.—“Field studies of potato-root eelworm, *Heterodera rostochiensis* Wollenweber, 1938-40.” 30 (2), 151-157.
- b. BOYD, A. E. W., 1943.—“Observations on the biology of the potato-root eelworm, *Heterodera schachtii* Schmidt.” 30 (2), 157-161.
- c. BOYD, A. E. W., 1943.—“Stimulation of larval emergence in *Heterodera schachtii* Schmidt, by certain concentrations of silver compounds.” 30 (2), 161-163.

*(58a) An account is given of trials with gasworks liquor, calcium cyanamide, calcium chloroacetate, farmyard manure and artificials over a period of 3 years on potato-sick land at 6 centres and with 4 varieties of potato. Results were measured by crop yields and numbers of viable eelworm cysts. No consistent differences in yield were given by the chemical treatments and there were only barely significant differences between the varieties. The yield was affected by the initial viable cyst content and when the latter was low the greatest increase in numbers of cysts occurred in conjunction with the highest yields. A high cyst content was only maintained if the yield was also high. Chemical treatments and host variety gave no significant differences in cyst population except that a barely significant depression in the number of viable cysts occurred after the application of 2 tons/acre of calcium cyanamide. There was some consistency in the number of cysts per unit yield of tubers in the 4 varieties, Great Scot having the greatest number followed by Arran Banner, Doon Star and Majestic. It is concluded that, in the north-west where the experiments were carried out, satisfactory potato crops can be grown even where the viable cyst content is high (over 25/10 c.c. soil) if other conditions are favourable, though yields will be moderate. Where the eelworm infestation is low it will be considerably increased by the growth of a potato crop. M.T.F.

(58b) Boyd investigates the effects of low temperatures and of soil type on the potato-root eelworm [*Heterodera rostochiensis* Woll.]. Variable results were obtained when dry, wet or soaked cysts were exposed to temperatures of -5° to -10° C. for periods up to 7 days, subsequent hatching of the larvae being normal in some cases and reduced in others. Free larvae were killed on freezing, but a small proportion could survive exposure for up to 48 hours in water in contact with ice. Many more cysts were produced on potato plants grown in sand inoculated with eelworm larvae than on plants grown in similarly inoculated clay (an average of 984 as compared with 174 per plant). Cysts produced in sand were significantly larger and more larvae hatched from them than from cysts from plants grown in clay. No cysts were produced in pots of peat-moss litter which were included in the experiment. The hatching of larvae from all the cysts was unusual in that it continued over a long period of time and 3 maxima occurred instead of the usual one. M.T.F.

(58c) Cysts of the potato eelworm [*Heterodera rostochiensis* Woll.] were treated with solutions of silver proteinate, silver benzoate and silver lactate at concentrations of 0.05, 0.01, 0.005 and 0.001% for 1 day, 1, 3 and 6 weeks at a constant temperature of 20° C. and then placed in potato root excretion. Counts were made of the larvae which emerged. It was found that the 0.05 and 0.01% solutions caused much reduced hatching, but that after pre-treatment in the 0.005 and 0.001% solutions more larvae hatched in the potato root excretion than from cysts previously soaked in tap water only. For example, three times the number of larvae produced in the controls emerged from cysts soaked in 0.001% silver proteinate for one day. As compared with the control, there was a considerable reduction in the numbers of larvae from cysts soaked for a week or more in the 0.005% proteinate and benzoate solutions and in both the 0.005 and 0.001% silver lactate solutions. It is suggested that more larvae are capable of hatching from cysts than do normally hatch in potato root excretion, and that the stimulative power of the more dilute silver solutions may be due to their action on the proteins, which prepares the eggs so that the potato root excretion has a greater effect than on untreated eggs. M.T.F.

59—Archiv für Hygiene und Bakteriologie.

- a. GAEHTGENS, W., 1943.—“Serodiagnostische Untersuchungen über Taenieninfektionen unter besonderer Berücksichtigung der Zystizerkenkrankheit.” 129 (1/6), 133-157.

(59a) Gaehgens has examined the serological reactions of 7 cases of cysticercosis with specific antigen and with hydatid. With both antigens strongly positive results were obtained with the complement fixation test and also with the precipitation test though the latter was not quite so satisfactory. He has adapted the Alessandro technique [Z. Immunforsch., 1935, 84, 237] of kaolin adsorption in order to make the test specific. Extract of *Cysticercus* is first incubated with kaolin: when such treated extract is used in the complement fixation test in the presence of specific antibody, antigen is adsorbed by the kaolin and the test gives a negative result. On the other hand, treated extract in the presence of non-specific antibody, e.g. hydatid, gives a positive result for the antigen is not adsorbed under these circumstances. Adsorption only occurs in the presence of specific antibody. A complementary test using hydatid antigen and antibody gives similar results. Antigen can be precipitated with the kaolin by centrifugation. P.A.C.

60—Archives of Dermatology and Syphilology.

- a. GUY, W. H., COHEN, M. & JACOB, F. M., 1943.—“Infection with *Loa loa*.” 47 (6), 763-767.

(60a) Guy et al. report a case of *Loa loa* infection in the U.S.A. in a female who had spent some years in the French Cameroons. They also give a brief general account of *Loa loa* and its incidence in man. A.E.F.

61—Berliner und Münchener Tierärztliche Wochenschrift und Wiener Tierärztliche Monatsschrift.

- a. BRACHETKA, J., 1943.—“*Echinococcus polymorphus* in der Glutaealmuskulatur beim Pferde.” 1943 (15/16), 113.

62—Boletín Mensual. Dirección de Ganadería, Montevideo.

- a. BERTULLO, V. H. & POSTIGLIONI, J., 1943.—“Hidatidosis del cerdo. Un caso de generalización con localizaciones óscas.” 27 (1), 15-23.

63—Brasil-Médico.

- a. CLAUSELL, D. T., 1943.—“Sobre o emprego do hexilresorcinol na terapeutica das helmintoses.” 57 (10/11), 86-87.
b. ROCHA, P., 1943.—“Novelo de *Ascaris* no bulbo duodenal. Achado radiologico.” 57 (21/22), 223-227.

64—British Journal of Surgery.

- a. LANGLEY, G. F., 1943.—“Primary echinococcal cyst of the uterus.” 30 (119), 278-280.

65—British Medical Journal.

- a. COURTNEY, A. D., 1943.—“Unusual case of obstruction by worms.” Year 1943, 1 (4301), 725-726.
b. FINE, J. & LIVNY, 1943.—“Filariasis in the Middle East.” Year 1943, 2 (4314), 327-328.

(65b) Cases of clinical filariasis are not uncommon among African native troops engaged in the Middle East. It is suggested that only filaria-free natives should be recruited from areas of known infestation, to prevent the spread of filarial infections to other areas. R.T.L.

66—Bulletin de l'Institut d'Hygiène du Maroc.

- a. BECMEUR, A., 1943.—“Deux ans de lutte contre l'ankylostomiase dans les mines de l'Office Chérifien des Phosphates.” New Series, 1 (Année 1941), 45-53.

(66a) Ancylostomiasis was reported from the Khouribga phosphate mines for the first time in 1937, and investigations carried out in 1938 showed that infestation was widespread among the miners. Nothing was done in 1939, but in 1940 and 1941 steps were taken to combat the disease. Treatment with tetrachlorethylene and improvement of the sanitary conditions resulted in eradication of ancylostomiasis by the end of 1941, with the exception of 109 lightly infested carriers with less than 10 eggs per c.c. of faeces. A.J.F.

67—Canadian Journal of Comparative Medicine.

- a. ANON, 1943.—“Legal standing of trichinosis in pigs. Judgment first Canadian case.” 7 (4), 114-117.
- b. ANON, 1943.—“The treatment of stomach worm disease (haemonchosis) of sheep.” 7 (8), 225-226.
- c. JONES, T. L. & KELSO, J. A., 1943.—“Can phenothiazine become toxic for horse after passage through pigs?” 7 (8), 240-242.
- d. SWALES, W. E., 1943.—“Observation on the use of phenothiazine for sheep in eastern Canada.” 7 (9), 280-284.

(67a) An action in the Canadian Court for negligence in producing and selling pork infested with *Trichinella spiralis* and as such alleged to be unfit for human consumption has failed. The pork had been marked by Government inspectors “Approved”, and consequently was found by them to be healthy and fit for food according to the Meat and Canned Foods Act. It was also held that there was no breach of implied warranty that the sausage meat was reasonably fit for the purpose for which it was sold and was of merchantable quality. Liability might have ensued had the plaintiffs notified the defendant that they intended to use the fresh pork in an abnormal way, viz., raw or only partially cooked, and did so relying upon his knowledge.

R.T.L.

(67b) The article draws attention to the value of even small doses of phenothiazine against haemonchosis in sheep. It is recommended, however, that every effort should be made to carry out winter or spring dosing against this and other helminthic diseases.

D.O.M.

(67c) The authors record the deaths of 4 horses within 72 hours of being seen eating straw at a manure heap. The manure had been thrown out from a pen in which pigs had been dosed with phenothiazine and this drug was found in the stomach of one of the horses. As it could not be assumed that the horses in this instance received an overdose of phenothiazine the authors discuss the possibility of toxic substances developing in the drug after its passage through the pigs.

D.O.M.

(67d) The author discusses the results obtained from the work on the development of preventive measures against parasitic diseases of sheep in eastern Canada. These measures involve the use of large doses of phenothiazine before the pasture season has commenced and have, so far, given excellent results. The treatment of adult sheep in winter is therefore recommended in preference to routine dosing during the grazing season.

D.O.M.

68—Canadian Journal of Research. Section D. Zoological Sciences.

- a. MacLULICH, D. A., 1943.—“*Proteocephalus parallacticus*, a new species of tapeworm from lake trout, *Cristivomer namaycush*.” 21 (5), 145-149.
- b. COLLIER, H. B., ALLEN, D. E. & SWALES, W. E., 1943.—“Observations on the fate of phenothiazine in domestic animals.” 21 (6), 151-159.
- c. MILLER, R. B., 1943.—“Studies on cestodes of the genus *Triaenophorus* from fish of Lesser Slave Lake, Alberta. I. Introduction and the life of *Triaenophorus crassus* Forel and *T. nodulosus* (Pallas) in the definitive host, *Esox lucius*.” 21 (6), 160-170.
- d. MILLER, R. B., 1943.—“Studies on cestodes of the genus *Triaenophorus* from fish of Lesser Slave Lake, Alberta. II. The eggs, coracidia, and life in the first intermediate host of *Triaenophorus crassus* Forel and *T. nodulosus* (Pallas).” 21 (9), 284-291.

(68a) MacLulich describes *Proteocephalus parallacticus* n.sp. from lake trout, *Cristovomer namaycush*, from Algonquin Provincial Park, Ontario. It can be distinguished by the crossing of the vagina around and under the cirrus sac. The new species was also recovered from speckled trout, *Salvelinus fontinalis*, and brown trout, *Salmo fario*.

P.A.C.

(68b) Collier et al. have used chromatographic and spectrographic methods to examine the fate of phenothiazine in various animals. The urinary conjugate in horses, dogs and sheep was identified as potassium leucophenothiazine sulphate. In rabbits leucothional was excreted in the conjugated form. Acidified urine of the pig and man contained a preponderance of phenothiazine. Oxidation and absorption probably took place in the rumen of sheep. Phenothiazine (largely as its derivatives) was quantitatively recovered from the faeces and urine of sheep, but only about half was recovered from the horse. The fate of the unrecovered drug is briefly discussed, as is the possible relationship between oxidation, absorption and anthelmintic activity.

W.P.R.

(68c) *Trienophorus crassus* and *T. nodulosus* are parasites of *Esox lucius*. They release their eggs in the spring, leave the host and die. The first intermediate hosts of both forms are species of Cyclops. The larva of *T. crassus* next develops into a plerocercoid in the muscles of fish of the genera *Coregonus*, *Leucichthys* and *Prosopium*. The plerocercoid of *T. nodulosus* develops in the liver of perch or ling. A third species of *Trienophorus* in the pickerel, *Stizostedion vitreum*, develops in Cyclops, then in the trout perch, *Percopsis omiscomaycus*, where it encysts in the liver. P.A.C.

(68d) In continuing his work on the fish cestodes (*Trienophorus*), Miller describes the first three stages of *T. crassus* and *T. nodulosus*. The eggs of the former are laid in the first half of May in Alberta, and those of the latter about a month later: they are white at first, soon becoming brown, and movement is seen within them two days before hatching—which occurs in 8 to 10 days. Eggs and coracidia are similar in both species. Coracidia are ovoid and at first swim rapidly by their long cilia: they grow by the gradual expansion of the ciliated cells—in cultures these are shed and the onchospheres crawl on the bottom. The normal first intermediate host for both species in Alberta is *Cyclops bicuspidatus*, but though they can infect *Diaptomus ashlandi* they do not develop in it. The power of the coracidia to infect decreases with age, and young stages of *Cyclops*, including nauplii, were most heavily infected. Onchospheres, without cilia, in the stomach were found to converge and expand their hooks against the wall and so penetrate into the periaermal space where they are in constant movement. They grow at first slowly and then rapidly to about 300 μ in 8 to 10 days, but when more than two or three are present they are smaller and the time is longer. The mature proceroid is recognized by the cercomere, with hooks, being constricted off, and the invaginated frontal gland of the future scolex. No further development occurs in *Cyclops*. The infected hosts tend to sink and become overgrown with epiphytes. N.G.S.

69—Cornell Veterinarian.

- a. BAKER, D. W. & NELSON, S. K., 1943.—“*Dicrocoelium dendriticum* infections in N.Y. State cattle.” 33 (3), 250-256.

(69a) Baker & Nelson report that *Dicrocoelium dendriticum* is present in New York State, and has become endemic in dairy herds in the central and southern areas of the State. This confirms the findings of Price & Kinchelov [J. Parasit., 1941, 27, Suppl. p. 14]. *D. dendriticum* has not been recorded in any other State. The infection is considered to be of considerable economic importance: all infected animals are unthrifty. The intermediate host in the United States has not yet been determined, but investigations on the biology and pathogenicity of the parasite are in progress. A.E.F.

70—Deutsche Tierärztliche Wochenschrift. Tierärztliche Rundschau.

- a. SCHMID, F. & WERNER, J., 1943.—“Die Wirkung von Wurmmitteln auf die verschiedenen Strongylidenarten des Pferdes. VIII. Santostibin.” 51/49 (5/6), 51.
b. KAUKER, E., 1943.—“Geflügelkrankheiten im Warthegau.” 51/49 (7/8), 64-66.

(70a) Schmid & Werner have found “Santostibin” (antimonoxynaphthalin-methoxyphenolate, containing a synthetic condensate of the effective complexes of male fern and santonin) to be effective against *Trichonema* spp., *Strongylus vulgaris*, *S. equinus*, and *S. edentatus* in horses. A total of 50 g. was given over 3 days, 15 g. on the 1st and 2nd days and 20 g. on the 3rd day. Previous fasting was unnecessary. There were no toxic effects, and the drug was well tolerated. A.E.F.

(70b) Among the causes of disease in poultry in Warthegau (West Poland) Kauker includes *Syngamus trachea*, *Prosthogonimus pellucidus*, stomach worms, *Echinuria uncinata*, and *Tetrameres fissispina*. *Syngamus trachea* is common in young birds in June and July, and there is a 6% mortality: Lugol solution, given in repeated daily doses, is recommended for the treatment of this infection. A.E.F.

* The first volume number is that of Deutsche Tierärztliche Wochenschrift and the second that of Tierärztliche Rundschau. Although the two journals are now issued as one, the volume number of each is retained.

71—East African Agricultural Journal.

- a. ANON, 1943.—“Notes on animal diseases. XVIII. Lung diseases and pyaemic infections of sheep.” 8 (4), 244-247. [Lungworms pp. 246-247.]

72—Farming in South Africa.

- a. STOFBERG, F. J. & LE ROUX, J. C., 1943.—“Citrus nematode investigations.” 18 (205), 259-260, 280.
b. MÖNNIG, H. O., 1943.—“Internal parasites of horses.” 18 (208), 511-516, 521.

(72a) Stofberg & le Roux report on investigations carried out in South Africa on the distribution of the citrus root nematode, *Tylenchulus semi-penetrans*, in various citrus growing districts and particularly on observations to determine whether its presence on citrus roots is responsible for “greening” of fruit. They present conclusive evidence that it is not, and also show that it may be present in considerable numbers on the roots of quite healthy trees. Two sets of experimental plantings of healthy citrus trees, one in a clean orchard and one in large drums, are described. Some of the trees in each case were watered with a heavy suspension of the parasite over a long period whilst others were kept as controls. In both cases “greening” of fruit occurred whether the roots were parasitized or not.

T.G.

73—Fruits et Primeurs de l'Afrique du Nord.

- a. BRICHET, J., 1943.—“Anguillules—nematodes—hétérodères. Parasites dangereux dont l'extension menace les cultures fruitières et maraîchères.” 13 (135), 68-72.

(73a) Brichet gives a general account of the root-knot nematode, *Heterodera marioni*, with special reference to it as a parasite affecting garden and fruit crops in North Africa. The paper is largely a compilation based on already established knowledge concerning the parasite published elsewhere, especially in U.S.A., and this indebtedness is duly acknowledged. He discusses a wide range of the practical aspects of the problems involved in attempts to control the parasite, and deals with soil treatment by heat and by chemicals, cultural operations, and the employment of resistant plants and resistant root stocks.

T.G.

74—Gardeners' Chronicle.

- a. MAITLAND, M. R., 1943.—“Potato eelworm.” 114 (2967), 176.

(74a) This is a general account of the effects of eelworm [*Heterodera rostochiensis*] attack on potatoes and of the life-history of the parasite. The eelworm cannot be destroyed in the soil but potato sickness can be somewhat alleviated by the application of manures to encourage root development. Great importance is attached to the practice of having a wide rotation to prevent the building up of heavy eelworm infections. The danger of potato eelworm attack on tomatoes is also emphasized.

M.T.F.

75—Indian Medical Gazette.

- a. MUKERJI, A. K. & GHOSH, B. K., 1943.—“Deterioration of ascaridol in oil of chenopodium.” 78 (5), 234-235.
b. MUKERJI, A. K. & MAPLESTONE, P. A., 1943.—“The treatment of taeniasis.” 78 (6), 282-283.
c. GHOSH, K. C., 1943.—“Torticollis and convulsions apparently due to ascariasis.” 78 (7), 345-346.

(75a) There is a progressive deterioration of Ascaridol even when kept protected from light and stored in a cool place. The results of periodical assays on two samples kept under different conditions for two years are given.

R.T.L.

(75b) From a study of 58 cases of taeniasis, including those previously reported in 1931, carbon tetrachloride has been found to give a cure rate of 80% as against 54% with tetrachlorethylene and 47% with hexylresorcinol. The dose of carbon tetrachloride varied according to age from 8 minims to a maximum of 48 minims (3 c.c.). Thirty-eight of the patients received the maximum dose and the symptoms of dizziness and drowsiness, which appeared in a few only, passed off quickly.

R.T.L.

76—Indian Veterinary Journal.

- a. MUDALIAR, S. V., 1943.—“A collection of helminths from goats, not recorded from South India.” 19 (6), 287-288.
- b. MUDALIAR, S. V., 1943.—“Some helminths recorded for the first time from South India.” 19 (6), 289.
- c. MUDALIAR, S. V., 1943.—“A species of *Rictularia* resembling *Rictularia mjobergi* Baylis, 1928, from the intestines of a dog and cat.” 20 (1), 22-23.
- d. RAHIMUDDIN, M., 1943.—“Rare incidences in veterinary practice.” 20 (1), 35-38.
- e. VENKATARATHNAM, B., 1943.—“Intra-ocular filariasis and its operation under field condition.” 20 (1), 45.

(76a) *Oesophagostomum venulosum*, *Gaigeria pachyscelis* and *Stilesia vittata* have been found for the first time in goats from the Nellore District, South India. R.T.L.

(76b) *Galoncus perniciosus* from *Felis pardus* at Hosur, and *Opisthorchis neverca* from *Canis familiaris* at Madras are now recorded for South India. R.T.L.

(76c) Mudaliar records the presence of *Rictularia mjobergi* in the intestines of cats and dogs in Madras, which seems to be a new geographical record. P.A.C.

(76d) Among other curious veterinary experiences Rahimuddin records the presence of a hydatid cyst as large as a goose egg in the left side of the heart of a cow near Madras. P.A.C.

(76e) Venkatarathnam removed a filariid worm from the eye of a pony. The worm lay in the aqueous humour of the anterior chamber and complete recovery followed its removal. P.A.C.

77—Journal of the American Medical Association.

- a. WESTPHAL, R. S., 1943.—“Human trichinosis following ingestion of bear meat.” 122 (4), 227-228.
- b. SISK, W. N., 1943.—“Effect of phenothiazine on intestinal parasites.” 122 (6), 357-360.
- c. BERCOVITZ, Z., PAGE, R. C. & DE BEER, E. J., 1943.—“Phenothiazine. Experimental and clinical study of toxicity and anthelmintic value.” 122 (15), 1006-1007.

(77a) Trichinosis followed the consumption of bear meat. The animal had been shot in northern New York State. Microscopical examination of a portion of the meat proved that it contained *Trichinella spiralis*. R.T.L.

(77b) The author is of opinion that phenothiazine is not sufficiently effective to be worth using in human cases of infection with hookworm or Trichuris. It is effective in removing some worms in an Ascaris infection but a comparatively large dosage must be used. In small children who can swallow a capsule whole it is reasonably effective with less toxic symptoms than santonin. For Oxyuris infections in adults a total dose of 40 g. of phenothiazine proved too toxic but was quite effective in those cases where the patient could tolerate this large dosage. A dosage of 12 g. was adequate and safe for routine treatment and gave no toxic symptoms. The method followed in 4 adults and 62 children over 6 years of age was (i) 1 g. per day for 6 days, (ii) rest for 8 days, (iii) 1 g. per day for 6 days. Children 1 to 6 years old were given 0.5 g. per day for the same period, and for children under 1 year the daily dose was 0.25 g. It is imperative to treat and cure all members of a household at one time. R.T.L.

(77c) From observations on 24 patients who were given a total dosage of 40 g. of phenothiazine at the rate of 1½ g. thrice daily for 10 days the authors concluded that it was not an effective anthelmintic. In 3 cases there was a decrease of more than 1,000,000 red blood cells per cubic millimetre, and in 9 cases a decrease of more than 10% in haemoglobin. Two patients developed nausea and vomiting. Eight out of 10 patients with *Enterobius vermicularis*, 3 cases with hookworms, 2 with *Ascaris lumbricoides* and 2 with *Taenia saginata* remained positive after treatment. After repeated oral administration to rats, hypoplasia of all cellular elements in the bone marrow was noted in one instance and normoblastic hypoplasia in another. R.T.L.

78—Journal of the American Veterinary Medical Association.

- a. McNALLY, W. D., 1943.—“The effect of varying doses of a commercial phenothiazine upon lambs.” 102 (792), 170-175.

- b. OLSEN, O. W., 1943.—“Preliminary observations on hexachlorethane for controlling the common liver fluke, *Fasciola hepatica*, in cattle.” 102 (795), 433-436.

(78a) From experiments on a flock of 15 lambs, of which 3 were controls, McNally finds that commercial phenothiazine in boluses containing 12.5 g. each can be given several times during the year without ill effect, but when given more frequently than once in two weeks pathological changes occur in the kidneys. With the more frequent doses there is a tendency to polycythaemia and in those receiving a bolus once a week to agranulocytosis. A table of weights is given but not discussed and helminth infection is not mentioned apart from the legend “A worm-stunted animal” under one of the illustrations. R.T.L.

(78b) *Fasciola hepatica* occurs in about 50% of the native adult cattle of the coastal prairie of Texas. An aqueous drench was prepared by mixing 500 g. of hexachlorethane (C_2Cl_6) of technical grade with 50 g. of powdered bentonite and 750 c.c. of tap water mixed with an electric kitchen mixer to produce a smooth suspension. Of this mixture 20 c.c. per 100 lb. of live weight was administered to 209 adults and yearlings. Of these 191, i.e. 91%, were negative three weeks later. R.T.L.

79—Journal of Bacteriology.

- a. HAMANN, C. B., 1943.—“Some implications of histamine production in experimental trichinosis.” 45 (1), 95-96.

(79a) Hamann found that histamine in blood and intestinal tissue increased in rats and guinea-pigs infested with *Trichinella spiralis*. The greatest increase was found during “the migratory and localization phase in the life cycle of the parasite”. It is suggested that the increased histamine may cause the ulceration of the intestine reported in *T. spiralis* infested animals. No correlation between blood histamine and eosinophilia was noted. W.P.R.

80—Journal of the Department of Agriculture. Victoria.

- a. ALBISTON, H. E., 1943.—“Internal parasites of poultry.” 41 (6), 305-307.

81—Journal of the Egyptian Veterinary Medical Society.

- a. NAGATY, H. F. & HALFAWI, S., 1943.—“On some adult filariae and microfilariae of birds from the Cairo Zoo.” 2 (1/2), for 1942, [Reprint 50 pp].

(81a) In an examination of 52 birds from the Cairo Zoological Gardens, Nagaty & Halfawi have found 9 microfilariae and 2 adults. They record *Microfilaria cephalocauda* from *Sturnus vulgaris*, *Mf. kadryi* n.sp. from *Sturnopaster capensis*, *Mf. nomani* n.sp. from 4 species of Sturnidae, *Mf. khalili* n.sp. from *Acridotheres tristis tristis*, *Mf. azizae* n.sp. from *A. javanicus*, *Mf. cissae* from *Cissa robinsoni*, and *Mf. salemi* n.sp. from *Ceracias garrulus garrulus*. Both adults and larvae of *Diploiridiaena nochi* and *D. leilae* n.sp. are recorded from *Acridotheres tristis tristis* and *Sturnus vulgaris* respectively. All species are described. P.A.C.

82—Journal of Experimental Medicine.

- a. SHOPE, R. E., 1943.—“The swine lungworm as a reservoir and intermediate host for swine influenza virus. III. Factors influencing transmission of the virus and the provocation of influenza.” 77 (2), 111-126.
b. SHOPE, R. E., 1943.—“The swine lungworm as a reservoir and intermediate host for swine influenza virus. IV. The demonstration of masked swine influenza virus in lungworm larvae and swine under natural conditions.” 77 (2), 127-138.

(82a) Continuing his studies on the transmission of swine influenza virus by lungworms, Shope has found that the earthworms *Allolobophora caliginosa* f. *typica* and *A.c.* f. *trapezoides* are capable of acting as intermediate hosts of virus infected lungworms, and that masked virus may occur in lungworm ova from infected swine and may persist in lungworm larvae in earthworms for as long as 32 months. Swine influenza virus infections developed spontaneously in several experiments 9 to 17 days after infestation with infected lungworms in the absence of any known provocative stress. So far the author has failed to elucidate the mechanism whereby masked virus is rendered infective. R.T.L.

(82b) The annual swine influenza epizootics in the mid-western States of America usually begin explosively at many different spots between October and November and have almost run their course by the end of December. Evidence is presented that the interepizootic period is spent by the virus in lungworm larvae within earthworms under natural conditions. R.T.L.

83—Journal of Experimental Zoölogy.

- a. FERGUSON, M. S., 1943.—“Migration and localization of an animal parasite within the host.” 93 (3), 375-400.

(83a) The cercariae of *Diplostomum flexicaudum* migrate through the bodies of rainbow trout and minnows and become located in the optic lens. The route is by the blood stream to the optic blood vessels and after reaching the iris they penetrate the lens. It is believed that the migration and localization is not fortuitous but depends on some stimulus which attracts the cercariae, although lenses transplanted into other parts of the body failed to influence the cercariae. Similarly experiments with slightly macerated material also gave negative results *in vitro*. R.T.L.

84—Journal of Infectious Diseases.

- a. RILEY, E. G., 1943.—“The effect of various stages of vitamin A deficiency in the white rat on the resistance to *Nippostrongylus muris*.” 72 (2), 133-141.

(84a) Riley confirms the fact that white rats suffering from avitaminosis A are more susceptible to infestation with *Nippostrongylus muris* than are healthy rats. The effect of the deficiency is not felt for 4 weeks and it can be counteracted to some extent by the use of immune serum. In the earliest stages of the development of the avitaminosis, an increased resistance to infestation was exhibited. P.A.C.

85—Journal of Parasitology.

- a. WEBSTER, J. D., 1943.—“Helminths from the robin, with the description of a new nematode, *Porrocaecum brevispiculum*.” 29 (3), 161-163.
- b. CORT, W. W. & OLIVIER, L., 1943.—“The development of the sporocysts of a schistosome, *Cercaria stagnicola* Talbot, 1936.” 29 (3), 164-176.
- c. PRATT, I. & LINDQUIST, W. D., 1943.—“The modification of the digestive gland tubules in the snail *Stagnicola* following parasitization.” 29 (3), 176-181.
- d. HEDRICK, L. R., 1943.—“Two new large-tailed cercariae (Psilostomidae) from northern Michigan.” 29 (3), 182-186.
- e. WOOD, S. F. & HERMAN, C. M., 1943.—“The occurrence of blood parasites in birds from southwestern United States.” 29 (3), 187-196.
- f. BYRD, E. E. & WARD, J. W., 1943.—“Observations on the segmental anatomy of the tapeworm, *Mesocostoides variabilis* Mueller, 1928, from the opossum.” 29 (3), 217-226.
- g. MESERVE, F. G., 1943.—“*Phyllodistomum coatneyi* n.sp., a trematode from the urinary bladder of *Ambystoma maculatum* (Shaw).” 29 (3), 226-228.
- h. REID, W. M., 1943.—“A phyllopteran (Nematoda) from the domestic pig.” 29 (3), 229-230.
- i. WEBSTER, J. D., 1943.—“The type of *Gyrocampa milligani* Linton, 1927.” 29 (3), 230.
- j. GOBLE, F. C. & CHEATUM, E. L., 1943.—“*Dispharynx spiralis* in golden and ring-necked pheasants in New York.” 29 (3), 230-231.
- k. LUTTERMOSER, G. W., 1943.—“A note on the life cycle of *Australorbis glabratus* (Say, 1818) Pilsbry, 1934, a snail intermediate host of *Schistosoma mansoni*.” 29 (3), 231.
- l. HIGHBY, P. R., 1943.—“*Dipetalonema arbuta* n.sp. (Nematoda) from the porcupine, *Erethizon dorsatum* (L.).” 29 (4), 239-242.
- m. HIGHBY, P. R., 1943.—“Mosquito vectors and larval development of *Dipetalonema arbuta* Highby (Nematoda) from the porcupine, *Erethizon dorsatum*.” 29 (4), 243-252.
- n. HIGHBY, P. R., 1943.—“Vectors, transmission, development, and incidence of *Dirofilaria immitis* (Leidy, 1886) (Nematoda) from the snowshoe hare in Minnesota.” 29 (4), 253-259.
- o. SARLES, M. P., 1943.—“Overwinter loss of nodular worm larvae from a sheep pasture and its bearing on the control of nodular worm disease.” 29 (4), 263-269.
- p. BYRD, E. E. & WARD, J. W., 1943.—“Notes on the genital system of the bird fluke, *Apharyngostrigea cornu* (Zeder).” 29 (4), 270-274.
- q. SHORB, D. A., 1943.—“Survival on grass plots of eggs and preinfective larvae of the common sheep stomach worm, *Haemonchus contortus*.” 29 (4), 284-289.
- r. WARD, H. L., 1943.—“A redescription of *Polymorphus obtusus* van Cleave, 1918 (Acanthocephala).” 29 (4), 289-291.
- s. DONALDSON, A. W., 1943.—“The prevalence of pinworm infection in an Ohio institution for children.” 29 (4), 298-299.
- t. DENCE, W. A., 1943.—“A leech feeding on *Ligula*.” 29 (4), 299-300.

(85a) Webster has recovered the following parasites from *Turdus migratorius* near Ithaca, New York: *Lyperosomum monenteron*, *Hymenolepis planestici*, *Dilepis undula*, *Porrocaecum ensicaudatum*, *P. brevispiculum* n.sp., *Acuaria (Dispharynx) spiralis*, *Syngamus trachea*, and *Plagiorhynchus formosus*. *P. brevispiculum* is distinguished by the presence of lateral alae, gubernaculum, short spicules and a vulva lying anteriorly. P.A.C.

(85b) Cort & Olivier have made a detailed study of the sporocyst generations of *Cercaria stagnicola*, the commonest dermatitis-producing schistosome of the Douglas Lake region. Mother sporocysts are elongated sacs narrowing to a birth pore and canal; they are found chiefly on the surface of the kidney and stomach. The germ cells, germ masses, and balls are at first attached to the thin body wall by strands, but later float freely. The great variety of germinal forms always present indicates a protracted and irregular polyembryony. Escaping daughter sporocysts have a spined birth pore, non-ciliated muscular walls, and are packed with separate germ cells—the result of an early polyembryony—each surrounded by a wall of flattened cells. Daughter sporocysts migrate actively into the digestive gland, and here somatic growth is more rapid than germinal, so that the elongated body contains well separated germ masses slung by protoplasmic threads, which later disappear. Development of cercarial embryos is less protracted than that of the previous generation, as in mature daughter sporocysts only a few germ masses are present. This development is compared with that of strigeids. N.G.S.

(85c) Pratt & Lindquist re-investigate the effect of parasitism on the liver of *Stagnicola emarginata angulata* [see Helm. Abs., Vol. X, No. 76h] with *Cercaria laruei* and *Diplostomum flexicaudum* by analyzing the counts of tubules and parasites in serial sections and comparing them with counts of tubules in an uninfected snail. There was no significant reduction in the number of the fir-tree-like branching tubules, though their level of maxima may be displaced by the presence of parasites between them. Histologically there was a change near the parasites: the columnar epithelium gave place to more flattened cells, though these also contained droplets. This suggested a suspension of secretory phase caused by the parasites, and which may be correlated with parasitic gigantism. N.G.S.

(85d) Hedrick describes two new Psilostome cercariae and rediae from *Ammicola limosa*: *Cercaria ameei* n.sp. with aspinous suckers and paired amber granules in the broad tail, and *C. limosae* n.sp. with groups of small spines on suckers and spiral lymph vessels in the rufous brown tail, which is about twice the width of the body. Neither have the excretory siphon near the anterior sucker and both of them have only five groups of two flame cells on either side of the body. Infection experiments on young perch, bullheads, guppies and tadpoles were negative. N.G.S.

(85e) This paper deals chiefly with protozoan parasites but it also records that microtilariae were found in 13 birds belonging to 10 species and included the following as new hosts: red-breasted merganser, California spotted owl, western robin, russet-backed thrush, pileolated warbler, hooded oriole, black-headed grosbeak, evening grosbeak, and Gambel sparrow. R.T.L.

(85f) Byrd & Ward describe the anatomy of the mature and gravid segments of *Mesocestoides variabilis* from *Didelphis virginiana*. They notice that the egg capsule is formed from the part of the uterus which was embedded in the paruterine cells of the mature segment. Both pairs of excretory canals lie in the same dorso-ventral plane and the genital pore is dorsal. P.A.C.

(85g) Meserve gives a description of *Phyllodistomum coatneyi* n.sp. which is compared with *P. americanum* Osborn, its nearest relative. N.G.S.

(85h) A species of immature *Physaloptera* was found embedded in the mucosa of the stomach of a pig in Kansas. Identification of the species was impossible. This is the first record of *Physaloptera* sp. from the pig. P.A.C.

(85i) On examining the type slide of the cestode *Gyrocoelia milligani* Linton, Webster finds another species belonging to a separate family also present (*Progynotaenia* sp.)—both from the bird *Crocethia alba*. Measurements of the fragments of *G. milligani* are given for the designated lectotype, and it is suggested that *G. milligani* of Baer, 1940 [see Helm. Abs., Vol. IX, No. 116a] from *Oxyechus vociferus* from Antigua may prove to be a distinct species. N.G.S.

(85j) *Dispharynx spiralis* is reported for the first time from *Chrysolophus pictus*. The parasite also occurs in *Phasianus colchicus*: this too may be a new host record but the position is not quite clear. P.A.C.

(85k) Luttermoser gives a tabular comparison of the growth and oviposition of the snail *Australorbis glabratus* under controlled conditions for one year, and he finds that age and diameter at the first oviposition and at the end of a year show no correlation with the total number of eggs produced, which varies from 55 to 1,045. There is also a wide variation in size, but by comparing the mean diameters of the laboratory snails and those in the field it is probable that the longevity is about one and a half to two years. N.G.S.

(85l) *Dipetalonema arbuta* n.sp. from the porcupine *Erethizon dorsatum* is distinguished from *Molinema diacantha* by the absence of lips and the presence of 8 cephalic papillae. It has 4 pre-anal, one median double pre-anal and 3 post-anal papillae. The embryos are unsheathed with a long pointed tail. R.T.L.

(85m) The larval development of *Dipetalonema arbuta* took place experimentally in the fat body of 6 species of mosquitoes in Minnesota but no natural infections were discovered. R.T.L.

(85n) Complete development of *Dirofilaria scapiceps* from *Lepus americanus phaeonotus* has been traced in 5 species of *Aedes* in Minnesota. The 1st and 2nd stages occur in the fat body. Microfilariae occurred in the blood of 2 domesticated rabbits 286 to 391 days after experimental infection. Infection followed the application of infective larvae removed from mosquitoes to scarified skin. This filaria is present in from 13% to 38% of the snowshoe hares of Minnesota. R.T.L.

(85 o) Experiments in Maryland show that *Oesophagostomum columbianum* larvae do not survive a fairly normal winter and an abnormally dry spring on a closely cropped pasture. The persistence of this infection from year to year in sheep is due to the continued presence of adults in the intestines. Anthelmintic treatment of all breeding stock in the winter and spring before being put to pasture should therefore prove a highly effective control for this infection. R.T.L.

(85p) This is a detailed description of the finer morphology of *Apharyngostrigea cornu* which is reported from several waterbirds, three species of heron and the American egret. R.T.L.

(85q) The influence of temperature, sunlight and moisture on the survival of the eggs and preparasitic stages of *Haemonchus contortus* has been studied. No larvae could be recovered in the spring from grass plots to which infected sheep faeces had been applied on 4 different occasions during the winter. Summer sunlight and heat are lethal to the second and third stage larvae. The constant presence rather than an increased amount of water favours survival. Wet seasons and concentration of manure on pastures especially around feeding or watering places increase the risk of infection. Water content is the essential difference between diarrhoeic faeces and normal pellets, and for this reason the former favours survival of eggs and larvae during summer. R.T.L.

86—Journal of Tropical Medicine and Hygiene.

a. CAWSTON, F. G., 1943.—“Streams infested with schistosome larvae.” 46 (4), 45.

87—Journal of Urology.

- BURT, J. C., LANE, C. M. & HAMILTON, J. L., 1943.—“Report of a case of bilharziasis.” 50 (1), 68-70.

88—Journal of the Washington Academy of Sciences.

- a. DRECHSLER, C., 1943.—“Two new basidiomycetous fungi parasitic on nematodes.” 33 (6), 183-189.
 b. ZELIFF, C. C., 1943.—“A new species of *Cyclocoelum*, a trematode from the catbird.” 33 (8), 255-256.

(88a) Drechsler gives an illustrated description of 2 new basidiomycetous fungi which parasitize and destroy free-living nematodes. They are *Nematocionus pachysporus* n.sp. and *N. leptosporus* n.sp. The former occurred in decaying roots of tomato and preyed on nematodes of the *Rhabditis monhystera* group; the latter occurred in leaf mould material from a wood and preyed upon species of *Bunonema*. T.G.

(88b) Zeliff describes *Cyclocoelum dumetellae* n.sp. from *Dumetella carolinensis* in U.S.A. It is most closely related to *C. obscurum*, but can be distinguished by the extension anterior of the vitellaria, sinuous oesophagus, equal testes and the proximity of the anterior testis to the left caecum. P.A.C.

89—Journal of Wildlife Management.

- a. SMITH, L. F., 1943.—“Internal parasites of the red fox in Iowa.” 7 (2), 174-178.
 b. VAN VOLKENBERG, H. L. & NICHOLSON, A. J., 1943.—“Parasitism and malnutrition of deer in Texas.” 7 (2), 220-223.
 c. BELL, J. F. & CHALGREN, W. S., 1943.—“Some wildlife diseases in the eastern United States.” 7 (3), 270-278.

(89a) Smith records the presence of the following helminth parasites in red foxes in Iowa: *Toxascaris leonina*, *Physaloptera felidis*, *Toxocara canis*, *Cruzia* sp., *Ancylostoma caninum*, *Taenia* spp., *Mesocostoides* sp. and *Cittotaenia pectinata*. There were no trematodes. *T. leonina* was the most abundant. Male foxes tended to be more heavily infested than females. P.A.C.

(89b) Deer suffering from malnutrition suffered heavily from helminth infestations in Texas. Two that were examined contained large numbers of *Haemonchus contortus* and *Cooperia punctata* and smaller numbers of *Nematodirus spathiger*, *N. filicollis*, *Cooperia pectinata* and *Trichostrongylus colubriformis*. Deer do not apparently graze closely unless food is scarce, under which conditions they become more exposed to infection. P.A.C.

(89c) A survey of arthropod-borne diseases in the Eastern States showed the presence of *Skjapingylus chitwoodorum* in a skunk in Pennsylvania. *Cysticercus pisiformis* was common in rabbits from New York, Virginia and Missouri, and one rabbit at least had died as the result of the liver lesions. A number of adult nematodes and cestodes were found in the gut of cottontail rabbits. P.A.C.

90—Lancet.

- a. ROBERTS, A., 1943.—“Hydatid disease in Wales.” [Correspondence.] Year 1943, 2 (6255), 88.

(90a) Roberts mentions that among the many autopsies made by him in Wales, especially in the northern counties, one of his brain cyst series had been regarded in life as a cerebral tumour and three others had been thought to be epilepsy. A game-keeper had multiple hepatic and intrathoracic cysts. Another case of hydatid occurred in a cripple whose hobby was “skinning foxes”. R.T.L.

91—Laval Médical.

- a. TURCOT, J., 1943.—“Un cas d'occlusion intestinale par des *Ascaris lombricoïdes*.” 8 (1), 28-31.

92—Medical Journal of Australia.

- a. MAPLESTONE, P. A., 1943.—“Some common helminths of man.” 30th Year, 2 (2), 25-27.
 b. GRANT, L. I. H., 1943.—“A case of phenothiazine poisoning in Sydney.” 30th Year, 2 (2), 27-29.

(92b) A case of acute haemolytic anaemia is recorded in a girl of 7½ years who had been treated for pinworm infection with a course of phenothiazine given 3 times a day for 7 days. The total dosage was 14 g. The blood count was 1,810,000 red blood cells per c.mm., haemoglobin 40%, and nucleated red cells were present. R.T.L.

93—Medicina Colonial. Madrid.

- a. LÓPEZ-NEYRA, C. R., 1943.—“Raillietinosis humanas en la zona tropical.” 1 (4), 215-242.

(93a) López-Neyra reviews the whole field of human infestation with *Raillietina* spp. in tropical areas. Particular attention is paid to geographical distribution and synonymy. P.A.C.

94—Mycologia.

- a. DRECHSLER, C., 1943.—“A new non-helicoid bisporous *Helicocephalum* parasitizing nematode eggs.” 35 (2), 134-141.
b. DRECHSLER, C., 1943.—“A new nematode-capturing *Dactylella* and several related *Hyphomycetes*.” 35 (3), 339-362.

(94a) Drechsler gives an illustrated technical description of *Helicocephalum diplosporum* which he found parasitizing the eggs of free-living nematodes. The fungus occurred on old maize meal cultures which had been inoculated with partly decayed leaves of *Poa pratensis* from a heap of lawn mowings. T.G.

(94b) Drechsler describes and figures a new nematode-capturing fungus, *Dactylella heterospora*, which occurred on old maize meal cultures to which partly decayed leaves of *Poa pratensis* had been added. In the absence of nematodes the fungus does not develop nematode-trapping rings but when nematodes are present, the hyphae produce, here and there, three-celled rings each attached to a two-celled stalk. The mechanism of capture is the same as in other fungi provided with trapping rings; the nematode on entering a ring causes the sudden swelling and contraction of the three cells composing it whereby the worm is held fast. The body is then penetrated by a haustorial ingrowth from which hyphae develop and ramify the body of the nematode destroying its contents. T.G.

95—Nature. London.

- a. ELLENBY, C., 1943.—“A modification of the Gemmell single cyst technique for the potato strain of the eelworm *Heterodera schachtii* Schmidt.” 152 (3848), 133.
b. CAWSTON, F. G., 1943.—“Identification of male schistosomes in uncommon sites.” [Correspondence.] 152 (3860), 477.

(95a) For hatching the larvae from single cysts of the potato eelworm *Heterodera schachtii* [*H. rostochiensis* Woll.] Ellenby makes vaseline circles in a Petri dish, and in each circle is placed a cyst in a drop of potato “root excretion”. This method is claimed to have advantages over the method described by Gemmell in 1940 [see Helm. Abs., Vol. IX, No. 414a]. M.T.F.

(95b) The author puts forward the view that adult male schistosomes, morphologically not identifiable, can be identified in unusual situations if the site is one where only one species is known to occur, although easily identified adults of another species occur in the same host. He instances schistosomes found in the eyelid of a puppy, experimentally infected with cercariae, in which typical examples of *S. haematobium* developed in the liver. These he diagnosed as *S. spindale* because this species is known to accumulate in the nasal veins. R.T.L.

96—New England Journal of Medicine.

- a. BROWN, H. W., 1943.—“Intestinal anthelmintics.” [Abstract of paper presented to the Harvey Society of Tufts College Medical School, Boston, Mass., October, 1942.] 228 (6), 207.

97—North American Veterinarian.

- a. P[ARK], S. E., 1943.—“Newer methods in the use of phenothiazine.” 24 (3), 147-152.

- b. KEMPER, H. E. & COBBETT, N. G., 1943.—“Death losses due to stomach worms among sheep on semi-arid range of New Mexico.” 24 (3), 167-168.
- c. SPINDLER, L. A., HILL, C. H. & ZIMMERMAN, jr., H. E., 1943.—“The pathogenicity of *Strongyloides ransomi*, the intestinal threadworm of pigs.” 24 (8), 475-486.

(97a) This is a review of 22 recent papers on the anthelmintic action of phenothiazine.

R.T.L.

(97b) The dryness of the soil and forage plants in the semi-arid areas of New Mexico are unfavourable to the development of *Haemonchus contortus*, but severe losses among yearling ewes associated with large numbers of these parasites occur if periods of abnormally heavy rainfall are succeeded by prolonged periods of drought, when the physical resistance of the animals declines owing to shortage of feed.

R.T.L.

(97c) *Strongyloides ransomi* is shown to be a serious cause of failure to grow, of weakness and of loss of weight, and even of death in pigs in America. There was anorexia, vomiting, nocturnal diarrhoea, intestinal haemorrhage and heart disorders. Third stage larvae were recovered from the muscles in infected pigs and in experimental rats. The association of similar symptoms in man with the allied species *S. stercoralis* is suggested.

R.T.L.

98—Parasitology.

- a. BALDWIN, E., 1943.—“An *in vitro* method for the chemotherapeutic investigation of anthelmintic potency.” 35 (3), 89-111.
- b. BAYLIS, H. A., 1943.—“Some nematode parasites of earthworms from the Indo-Malay region.” 35 (3), 112-127.

(98a) Baldwin has standardized an *in vitro* method for the examination of anthelmintics. The behaviour of isolated fragments of *Ascaris lumbricoides* (pig strain) in the presence of various drugs was followed kymographically and it was found that recognized anthelmintics (with the exception of phenothiazine and gentian violet) in dilutions greater than 1:1,000, produced marked effects leading to paralysis, whereas the numerous pharmacologically active compounds known to lack anthelmintic activity (including atropine sulphate, strychnine nitrate, eserine and acetylcholine hydrochloride) had little effect. The author suggests that the method is suitable for preliminary anthelmintic assay to select drugs for further testing on infected animals.

W.P.R.

(98b) Following a valuable discussion on the systematic relationships of the nematodes occurring in the coelomic cavities of earthworms, Baylis gives a detailed, illustrated description of several new forms from earthworms of the Indo-Malay region including the following: Fam. Drilonematidae; *Synoeinema hoplochaetellae* n.sp., *S. drawidae* n.sp., *S. perionychis* n.sp., *S. pheretimae* n.sp., *Perodira alata* n.g., n.sp.: Fam. Creagrocercidae n. fam.; *Creagrocercus barbatus* n.g., n.sp.: Fam. Scolecophilidae n. fam.: *Scolecophiloides gatesi* n.g., n.sp.

T.G.

99—Phytopathology.

- a. SMITH, O. F. & ALLEN, M. W., 1943.—“The bulb or stem nematode on alfalfa, sweet clover, and white clover.” 33 (6), 525-526.

(99a) Smith & Allen report the occurrence of disease in alfalfa, *Medicago sativa* L., caused by the stem eelworm, *Ditylenchus dipsaci*, near Reno, Nevada, U.S.A. In the same field numerous plants of sweet clover, *Melilotus alba* Desr., and a few plants of white clover, *Trifolium repens* L., were affected and showed swollen distorted shoots. Successful cross infection experiments showed that one and the same strain of the parasite was responsible for the disease in all three hosts. Infected alfalfa buds taken from another field at Minden, Nevada, and used as a source of infective material in an attempted cross infection experiment, failed to infect sweet clover; thus seeming to indicate the presence of different strains of the parasite in the two localities.

T.G.

100—Plant Disease Reporter.

- a. FOSTER, H. H., VÉLEZ FORTUÑO, J. & IRIZARRY RUBIO, G., 1943.—“Notes on tobacco and tobacco diseases in Puerto Rico during the early part of the 1942-43 season.” 27 (1), 8-11.
- b. TAYLOR, A. L., 1943.—“The effect of root knot on fig seedlings.” 27 (10/11), 224-225.

(100a) Root-knot due to *Heterodera marioni* is recorded on tobacco in seedbeds and field plots, causing severe stunting in some cases. Continuous growing of tobacco, and weather conditions favouring the eelworms, have probably encouraged the disease, which, it is considered, may become serious in the district with continued cultivation of the crop. M.T.F.

(100b) Several species of fig were tested to determine the effects of infection with *Heterodera marioni*. All the seedlings grown in infected soil were heavily infected; the majority died within a few months, after showing such symptoms as stunting and death of the branches. M.T.F.

101—Plant Disease Reporter. Supplement.

- a. PIRONE, P. P., 1943.—“Gardenia rootknot (*Heterodera marioni*).” No. 140, 29.

(101a) Gardenias, roses and other greenhouse plants are heavily attacked by root-knot in New Jersey. Steam sterilization and chloropicrin are recommended for control. A new product called Sani-Grow, which is said by the makers to kill nematodes in growing gardenia plants, was not found to be effective. M.T.F.

102—Proceedings of the Helminthological Society of Washington.

- a. DOUGHERTY, E. C., 1943.—“The genus *Filaroides* van Beneden, 1858, and its relatives: preliminary note.” 10 (2), 69-74.
- b. DOUGHERTY, E. C., 1943.—“The lungworms of porpoises: a correction.” 10 (2), 74-75.
- c. BLANTON, F. S. & CHITWOOD, B. G., 1943.—“The tolerance of 40 varieties of narcissus to a hot-water-formalin treatment based on the experiments of 1939-40 and 1940-41.” 10 (2), 75-78.
- d. THORNE, G., 1943.—“*Cacopaurus pestis*, nov. gen., nov. spec. (Nematoda: Criconematinae), a destructive parasite of the walnut, *Juglans regia* Linn.” 10 (2), 78-83.
- e. PRICE, E. W., 1943.—“A new trematode of the genus *Polystoma* (Monogenea: Polystomatidae) from *Xenopus laevis* Daud.” 10 (2), 83-85.
- f. PRICE, E. W., 1943.—“A redescription of *Heterobilharzia americana* Price (Trematoda: Schistosomatidae).” 10 (2), 85-86.
- g. OLIVIER, L., 1943.—“The occurrence of *Syngamus trachea* in mature chickens.” 10 (2), 87.
- h. WEHR, E. E. & OLIVIER, L., 1943.—“The efficacy of barium antimony tartrate for the removal of gapeworms from pheasants.” 10 (2), 87-89.

(102a) Dougherty lists the synonyms, genotypes and species and their type host of the genera *Filaroides* and *Metathelazia*, together with the more important references in the literature. R.T.L.

(102b) Dougherty recently renamed *Stenurus minor* (Kuhn 1829) *S. phocoenae*. He now shows this is a synonym of *Stenurus vagans* (Eschricht 1841). R.T.L.

(102c) Blanton & Chitwood have treated narcissus bulbs belonging to 40 different varieties in weak formalin (1:200) at 110° F. for 4 hours with or without a pre-soak in water at 70° to 80° F. for 2 hours. The treatments were given in 2 consecutive years. The bulbs were planted under the same conditions as equal numbers of untreated ones and at the end of each season they were dug up, allowed to dry for 2 weeks and were then weighed individually. The results of increase or decrease in weight, as compared with the untreated controls, are set out graphically and show that treatment may or may not cause injury to the bulbs as expressed in gain or loss in weight during the growing period. T.G.

(102d) Thorne describes and figures *Cacopaurus pestis* n.g., n.sp. [a small nematode closely resembling *Paratylenchus macrophallus* (de Man)], which was found in large numbers parasitizing the roots of the Persian walnut, *Juglans regia* L., in a 30 acre orchard at Santa Clara, California, U.S.A. The symptoms and root injury manifested by the affected trees are described and some account of the life-history is given. T.G.

(102e) To a description of *Polystoma xenopi* n.sp. from *Xenopus laevis* collected near Capetown, South Africa, Price adds a key to the 8 species which now form this genus. R.T.L.

(102f) After redescribing *Heterobilharzia americana*, Price notes that this species was originally collected from *Lynx rufus floridanus* not "*Lynx* species, probably *L. uinta*" as stated in the first account of this parasite. R.T.L.

(102g) The finding of *Syngamus trachea* in 7 out of 13 adult hens suggests that under certain conditions mature birds may, as reservoirs, be important factors in the spread of this infection. R.T.L.

(102h) Barium antimonyl tartrate inhaled as a dust is as highly effective for the removal of gapeworms in pheasants as it has already been proved to be for chickens and turkeys by Wehr, Harwood & Schaffer [see Helm. Abs., Vol. VIII, No. 53a]. R.T.L.

103—Proceedings of the Indian Academy of Sciences. Section B.

- a. CHAUHAN, B. S., 1943.—"Trematodes from Indian marine fishes. Part II. On some trematodes of the gasterostome family Bucephalidae (Braun, 1883) Poche, 1907, with description of four new species." 17 (4), 97-117.
- b. CHAUHAN, B. S., 1943.—"Trematodes from Indian marine fishes. Part III. Description of a new species of the genus *Mehratrema* (family Monodhelminthidae Dollfus, 1937)." 17 (5), 133-137.

(103a) Chauhan reviews the genera *Bucephalopsis* and *Rhipidocotyle* and provides keys to their species. The new species described are: *Bucephalopsis microcirrus* n.sp. from *Sciaena belengeri*, *Rhipidocotyle ligulum* n.sp. from *Arius falcarius*, *R. apapillosum* n.sp. from *Clupea* sp., and *Neidhartia microrhyncha* n.sp. from *Psettodes erumei*—all from the region of Bombay. N.G.S.

(103b) *Mehratrema polynemusinis* n.sp. is described by Chauhan from the intestines of the following fishes from Bombay: *Polynemus indicus*, *Muraenesox talabonoides* and *Sciaena* sp. Comparisons are made with the Indian genotype, *M. dollfusi*, from which the new species differs, among other characters, in the absence of the peculiar metratrem and in that the uterine coils are entirely post-acetabular. N.G.S.

104—Proceedings of the Pennsylvania Academy of Science.

- a. JOHNSON, J. C., 1943.—"Some further observations on *Cercaria edinboroensis*." 17, 25-26.

(104a) Johnson found snails (*Physa* sp.) in Lake Edinboro and a nearby creek to be heavily infected with rediae, cercariae and the "encysted stage" of a larval trematode—the latter stage being the most abundant—in November to March (1941-42). The infection was apparently absent in the succeeding June and July but light infections of the cysts were found in the following November, December and March. A few snails harboured two species, but the most abundant is named *Cercaria edinboroensis* n.sp.: it is not described or figured though some measurements are given. It is a tailed species. N.G.S.

105—Queensland Agricultural Journal.

- a. BRETTINGHAM-MOORE, G. R., 1943.—"Worms in calves." 57 (1), 50-51.
- b. MOULE, G. R., 1943.—"Red worm disease of horses." 57 (1), 53-54.

106—Report. Experimental and Research Station. Cheshunt.

- a. SPEYER, E. R., 1943.—“Animal pests. I. Eelworm (Nematoda).” 28th (1942), 48-50.

(106a) Speyer finds that a solution of one part of potassium iodide in 2,400 of water applied at rates of 30 and 120 gallons per 100 sq. yds. to soil infested with root-knot eelworm does not destroy the parasite. The effects (on unspecified “soil-inhabiting eelworms”) of immersion for varying periods of time in several strengths of formaldehyde, cresylic acid, potassium iodide, nicotine and thymol solutions are given.

M.T.F.

107—Report of the South Carolina Agricultural Experiment Station.

- a. KYZER, E. D., ANDERSON, G. W. & PACE, J. E., 1943.—“A comparison of sanitary methods and feeding practices in the control of kidney and round worms of swine.” 55th (1941-1942), 87-89.

(107a) Between 1937 and 1941 the results of sanitary control recommended by the U.S. Bureau of Animal Industry for the rearing of pigs has been compared with those obtained under unsanitary conditions. The data show no appreciable difference in the economy of gains in favour of either method. While the percentage infected with roundworms was higher in the unsanitary lot the individual infestation was not heavy enough to affect materially the rate and economy of gain. It appeared that the approved practice of full-feeding a balanced ration from the time the pigs began eating until the completion of the fattening period might be largely responsible for the comparatively little damage from internal parasites and that sanitation was of no apparent advantage.

R.T.L.

108—Revista Brasileira de Biologia.

- a. RUIZ, J. M. & LEÃO, A. T., 1943.—“Notas helmintológicas. 5. *Mesocoelium sibynomorphi* n.sp. (Trematoda, Dicrocoeliidae).” 3 (2), 145-148.
- b. GUTIERREZ, R. O., 1943.—“Sobre la morfología de una nueva especie de *Contracaecum* (Nematoda, Ascaroidea).” 3 (2), 159-172.
- c. RUIZ, J. M. & LEÃO, A. T., 1943.—“Notas helmintológicas. 6. *Cyathocotyle brasiliensis* n.sp. (Trematoda, Cyathocotylidae), parasito de *Caiman sclerops* (Gray) do Brasil.” 3 (2) 191-198.
- d. TRAVASSOS, L., 1943.—“Um novo Trichostrongylidae de *Brachyteles arachnoides* (E. Geoffroy): *Graphidioides berlai* n.sp. (Nematoda, Strongyloidea).” 3 (2), 199-201.

(108a) Ruiz & Leão describe *Mesocoelium sibynomorphi* n.sp. from the Brazilian snake, *Sibynomorphus mikantii mikantii*, and compare it with the related *M. travassosi* from *Bufo* sp., from which it differs in being larger, lacking cuticular spines, and in the intestine being confined to the anterior half of the body, besides a number of other characters.

N.G.S.

(108b) *Contracaecum travassosi* n.sp., present in large numbers in the cormorant *Phalacrocorax albiventer*, is described in great detail.

R.T.L.

(108c) In describing *Cyathocotyle brasiliensis* n.sp. from the small intestine of *Caiman sclerops*, Ruiz & Leão distinguish it from all other species of the genus by the larger suckers, and the much larger pharynx—which is always larger than the oral sucker; the eggs are also larger, though they are smaller than the vitelline follicles. Tabular comparisons between the species are given and the related genera are reviewed. No reliable criteria are found for the separation of the genera *Cyathocotyle* Mühling, *Cyathocotyloides* Szidat, and *Holostephanus* Szidat. *Cyathocotyle teganuma* Ishii is transferred to the genus *Paracyathocotyle* Szidat.

N.G.S.

(108d) A fourth species of *Graphidioides*, viz., *G. berlai* n.sp., is described from *Brachyteles arachnoides* taken at Parati, Brazil.

R.T.L.

109—Revista del Instituto de Salubridad y Enfermedades Tropicales. Mexico.

- a. MAZZOTTI, L. & OSORIO, M. T., 1943.—“Cinco nuevos casos de infección humana por *Hymenolepis diminuta* en México.” 4 (1), 49-52. [English summary p. 51.]

- b. MAZZOTTI, L. & QUINTANAR, E., 1943.—“La importancia de los exámenes repetidos en el diagnóstico de la oxiuriasis.” 4 (2), 167-171. [English summary p. 171.]
- c. MAZZOTTI, L. & QUINTANAR, E., 1943.—“Examen de 1,551 niños de la ciudad de México, utilizando el método de Graham, para investigar oxiuriasis.” 4 (2), 173-178. [English summary p. 178.]
- d. QUINTANAR, E., 1943.—“Investigación sobre *Enterobius vermicularis* en la región vulvar.” 4 (2), 179-181. [English summary p. 181.]

110—Revista Médica de Chile.

- a. NEGhme R., A., 1943.—“Aspectos epidemiológicos de las parasitosis intestinales.” 71 (3), 212-222.
- b. ALESSANDRI, H., GARCÍA P., P. & LERNER, J., 1943.—“Diagnóstico y tratamiento de las parasitosis más frecuentes.” 71 (3), 199-211.

111—Revista de Sanidad y Asistencia Social.

- a. LUTTERmoser, G. W., 1943.—“Destrucción de caracoles transmisores de *Schistosoma mansoni* en Venezuela. Informe II.” 8 (1), 3-44.

(111a) The substance of Luttermoser's work on the life-history and control of *Australorbis glabratus* in Venezuela has already been published in two papers in J. Parasit.; for abstracts see Helm. Abs., Vol. XI, No. 219bq, and above No. 85k. A.E.F.

112—Transactions of the American Microscopical Society.

- a. ALLISON, L. N., 1943.—“*Leucochloridiomorpha constantiae* (Mueller) (Brachylaemidae), its life cycle and taxonomic relationships among digenetic trematodes.” 62 (2), 127-168.
- b. JONES, A. W., 1943.—“*Protogynella blarinae* n.g., n.sp., a new cestode from the shrew, *Blarina brevicauda* Say.” 62 (2), 169-173.
- c. SHEPARD, W., 1943.—“A new hymenolepidid cestode, *Hymenolepis parvisaccata*, from a pintail duck.” 62 (2), 174-178.
- d. DELAUNE, E. T. & MAYHEW, R. L., 1943.—“Studies on bovine gastro-intestinal parasites. VI. The blood picture in stomach worm (*Haemonchus contortus*) infections.” 62 (2), 179-193.

(112a) Allison has studied the life-cycle of *Leucochloridiomorpha constantiae* from the cercaria to the adult, which normally occurs in *Anas rubripes*, but was reared in *Procyon lotor* and in chickens: in the latter it produced eggs from the 3rd to the 30th day after infection. Biological data are given for the burrowing gilled snail, *Campeloma decusum*, which serves as the first and second intermediate host. Embryonated eggs are probably eaten by the snail and give rise to miracidia bearing cilia on six bars (similar to some *Bucephalus* spp.). The salmon-pink mother- and daughter-sporocysts found mainly in the uterus, both contain cercariae, are branched and have birth pores at the tips of some of the branches. The escaped forked-tailed cercariae hovering near the snails are caught up in the respiratory current and ultimately make their way to the uterus where they develop into unencysted metacercariae in about five months. Their reserve excretory system is described as well as the functional system of this and other stages. The species is thought to be ancestral to the typical brachylaemids which have become terrestrial and tend to lose the cercarial tail. Emended diagnoses are given for the species, genus, subfamily Brachylaeminae, and the family Brachylaemidae—which is here removed from the order Prostomata and placed in Strigeatoidea, where a new superfamily Brachylaemoidea is created for it. The relationships of this species to the bucephalids are shown to be close. N.G.S.

(112b) Jones describes *Protogynella blarinae* n.g., n.sp. (Hymenolepididae) from *Blarina brevicauda* in Virginia. It is protogynous, a condition rare among cestodes. He suggests that self-fertilization is almost impossible as the worm is so short. P.A.C.

(112c) Shepard describes *Hymenolepis parvisaccata* n.sp. from *Anas acuta tztizihua* in Oklahoma. It can be differentiated by the nature of the scolex armature and the presence of a remarkable sacculus accessorius lying within the cirrus pouch. P.A.C.

(112d) The changes in the erythrocytes, haemoglobin, total leucocytes and differential leucocytes which resulted from the experimental infection of 6 calves with *Haemonchus contortus* are recorded in detail. These show that injury is done to the host by the larval phases as well as by the adult worms.

R.T.L.

113—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. TROWELL, H. C., 1943.—“Dimorphic anaemia. Deficiency of iron associated with nutritional macrocytic anaemia.” 37 (1), 19-40.
- b. ELLIOTT, M., 1943.—“Phenothiazine in the treatment of human intestinal helminthic infestations.” 37 (2), 163-164.
- c. YARWOOD, G. R., 1943.—“Paragonimiasis.” [Correspondence.] 37 (2), 165.

(113b) According to Elliott the American standard of dosage for phenothiazine, viz., 1 g. for 10 lb. of body weight, would appear to be a safe adult level for human cases. No case of intolerance occurred in 70 adult West Africans. 20 g. to 30 g. were given over a period of 4 to 5 days in two 1 oz. tablets three times a day after meals. Preliminary results, based however on incomplete parasitological examinations, showed that phenothiazine was effective in a certain number of cases of *Ancylostoma duodenale*, *Strongyloides stercoralis*, *Ascaris lumbricoides*, *Taenia saginata* and *Trichuri trichiura*.

R.T.L.

(113c) Yarwood reports considerable improvement without special treatment in this case after the removal of the intra-cranial cyst, and suggests that the cyst may have had communication to the neck and so have been drained by the operation.

R.T.L.

114—Veterinary Record.

- a. BEGG, H., 1943.—“A problem in research for helminthologists?” [Correspondence.] 55 (44), 428.
- b. BLOUNT, W. P., 1943.—“A problem in research for helminthologists?” [Correspondence.] 55 (47), 460.

(114a) The problem posed by the Professor of Parasitology at the Veterinary College in Glasgow is “To what extent is ‘the chewing’ of infective herbage and in ruminants, its subsequent trituration during rumination, prophylactic of Helminthiasis?”

R.T.L.

(114b) Blount replying to Begg [see preceding abstract] states that “Although the trituration of the food by the process of rumination is expected to be fine, as a fact, with sheep, many particles of food at least 5 mm. long escape the grinding process, whilst with cattle pieces of grass, hay, etc., up to $\frac{1}{2}$ in. are regularly passed in the dung. It is obvious, therefore, that eggs 0.1 mm. long and infective larvae 0.5 mm. long may easily escape the destruction hoped for by Professor Begg”.

R.T.L.

115—Zeitschrift für Fleisch- und Milchhygiene.

- a. BUGGE, G., 1943.—“Zu Leuckarts Zeichnung des Muskelegels der Schweine.” 53 (15), 141-145.
- b. SCHÖNBERG, 1943.—“Kurzer Hinweis auf die zweckmässige Behandlung von Schinken- und Wurstproben mit Kalilauge für die Untersuchung auf Trichinen.” 53 (16), 156-157.
- c. ANON, 1943.—“Trichinenfund beim Eisbären.” 53 (17), 168-169.

(115a) Bugge makes a further contribution to the *Agamodistomum suis* controversy [for earlier papers see Helm. Abs., Vol. XI, Nos. 27b & 79b]. After examining a further series of infected wild pigs he concludes that the flukes reach the abdominal and thoracic cavities by an unknown route, and after some time penetrate the peritoneum and pleura and reach the surrounding fatty tissue. Although they then migrate into almost all organs of the abdominal and thoracic cavities, they settle primarily in the connective tissue. Leuckart's drawing, which has been copied in many textbooks, does not show the host capsule (clearly seen in Bugge's photographs), and is in other respects inaccurate.

A.E.F.

(115b) Schönberg recommends that pieces of smoked ham the size of an oat grain should be soaked for 10 to 20 minutes (or till they become bright and glassy) in 10% caustic potash before examination in the compressorium for the presence of *Trichinella spiralis* larvae. After this procedure larvae are more easily seen. W.P.R.

(115c) The musculature of a 5-year-old polar bear from the Hanover Zoo was found to have a light to medium infection with encysted *Trichinella* larvae. Rats were common in the polar bear enclosure at this Zoo. A.E.F.

116—Zeitschrift für Immunitätsforschung und Experimentelle Therapie.

- a. KATHE, J. & PETERS, F., 1943.—“Ueber die Trichinose und ihren Nachweis, unter besonderer Berücksichtigung der immunbiologischen Verfahren.” 103 (1), 1-25.

(116a) In a general consideration of trichinosis, including a description of the course of the disease, Kathe & Peters point out that it can best be diagnosed by the use of the Casoni reaction, by precipitation and by complement fixation. The skin test is particularly useful as it will reveal latent infestations but its specificity is not entirely unqualified as certain given observations show. But it is an easy test to carry out and in general gives excellent results. P.A.C.

117—Zeitschrift für Infektionskrankheiten, Parasitäre Krankheiten und Hygiene der Haustiere.

- a. SCHMID, F., 1943.—“Versuche zur Behandlung des Magenwurmbefalles der Wiederkäuer.” 59 (3), 146-157.
b. MATOFF, K., 1943.—“Ueber die Empfänglichkeit des Schafes für Muskeltrichinellose.” 59 (3), 163-202.

(117a) Schmid found that “Magenwurmtabletten” Marienfelde [“Sprehn's tablets”] were effective against *Haemonchus contortus* in sheep, but had little or no effect on the small trichostrongyles. They were partially effective against *Moniezia*. The following preparations were found to be unsatisfactory against the small trichostrongyles: “Magenwurmtabletten” Bengen (containing potassium arsenite), Carboxol, Arsinosolvin, pyrethrum extract, Distomatol, carbon tetrachloride, cuprammonia solution, iodine preparations, Strongylon, and Lentin. In a footnote, added while the paper was going through the press, Schmid states that he has also carried out successful experiments with phenothiazine against gastro-intestinal nematodes in sheep. No details are given. A.E.F.

(117b) Contrary to the generally accepted view, lambs and sheep are very sensitive to experimental infection with both “intestinal” and “muscle” *Trichinella*. All the animals chewed up and swallowed the meat of infected rats (including bones) without any reluctance. There is no age immunity in sheep. In one lamb all larvae in the muscles were dead, calcified or structureless 60 days after infection: in another some larvae were still alive and uncalcified after the completion of the 5th month. The dying off of larvae in the muscles of these two lambs is looked upon as “primary” death since it was not preceded by calcification of the cyst but was the result of a strong defence reaction on the part of the host's musculature. These foci of reaction were observed both in the early stages of cyst formation (e.g. 30 days after infection) and in the later stages when the cysts were completely formed. In sheep the masseter muscles are the most heavily infected. The average ratio of the number of larvae in diaphragm and masseters was 1:3.57. Matoff's findings on the dying-off of larvae in the muscles do not agree with Kotlán's assumption that larvae which have developed in the muscles of ruminants soon die as a result of lack of adaptation. *Trichinella* larvae and *Sarcocystis tenella* were frequently enclosed together in a well-formed *Trichinella* capsule. This brings fresh support to the theory of the intrafibrillar position and development of *Trichinella* larvae, since *S. tenella* is definitely an intrafibrillar muscle parasite. R.T.L.

118—Zeitschrift für Pflanzenkrankheiten (Pflanzenpathologie) und Pflanzenschutz.

- a. KOTTE, W., 1943.—“Die durch *Tylenchus dipsaci* Kühn verursachte ‘Umfällerkkrankheit’ des Tabaks.” 53 (1/3), 37-42.

(118a) Kotte deals with an eelworm disease of tobacco plants caused by *Anguillulina dipsaci* occurring in Alsace which has been known to tobacco growers there for about 30 years under the name of "Umfallerkrankheit" ["falling-down-disease"]. He describes the symptoms and shows that the parasite attacks the stems up to 40 cm. above ground level causing blister-like galls of the cortical tissues which eventually turn black. This is accompanied by a general stunting of growth and yellowing of the foliage. The stems become weakened and the plants are liable to fall over during windy weather. Cool damp conditions in the summer favour attack whereas warm dry weather tends to check it. The author considers that the parasite is highly specialized to tobacco and because of this special care need not be exercised in the choice of alternate crops for a rotation even though some of these such as rye, potatoes, beet, flax and clover are known hosts of the parasite. T.G.

119—Zeitschrift für Veterinärkunde.

- a. MARKWARDT, 1943.—"Über das Vorkommen der lebenden und abgestorbenen Rinderfinne in Kaumuskel, Zunge und Muskulatur unter besonderer Berücksichtigung der Herzmuskulatur. (Beobachtungen an einem Schlachthof in der Ukraine)." 55 (3), 68-69.

(119a) Markwardt states that 13% of all cattle slaughtered at an unnamed Ukrainian town are infected with *Cysticercus bovis*. In June to September 1942, 200 infected cattle were examined to obtain data on site of infection. In 103, the masseters were involved; in 113, the heart; in 8, the tongue; and in 5, the musculature. In 20 cases both heart and masseters were infected; in 6, heart and tongue; and in 4, head and tongue. In 74 (37%) of the 200 cattle the cysticerci were viable, and in 4 animals both dead and viable larvae were seen in the same organ. In each of 2 cattle one calcified larva was found in the heart. As a result, Markwardt includes the heart among the predilection sites for *C. bovis* in cattle. A.E.F.

NON-PERIODICAL LITERATURE

- 120—ANON, 1943.—"Co-ordinated trials with phenothiazine against nematodes in lambs. A report prepared at the instance of the Agricultural Research Council of the United Kingdom." Imperial Agricultural Bureau, Joint Publication No. 4, 56 pp.

This report deals with the effects of using phenothiazine, in tablet form and as a drench, against nematodes in 280 lambs, divided into 10 unit flocks of 28. The effects were measured by egg counts, worm counts, and lamb weights. In each unit flock 4 lambs at each dosage were given 0 (controls), 5, 10, 20, 30, 40 and 50 g. of the drug, 4 flocks being kept inside for 6 weeks and then killed for worm counts, and 6 kept outside for 16 weeks and weighed at 3-weekly intervals. The experiment was conducted at 4 Institutes, at Edinburgh, Cambridge, St. Albans and Weybridge, and both planning and analysis were supervised by Prof. R. A. Fisher. The actual data, with notes on statistical methods, are collected in a series of appendices. From the body of the report it is clear that the most marked reduction in egg counts occurred at the lowest dose (5 g.), probably owing to the marked susceptibility of the prolific *Haemonchus*. On the other hand, weight increases over 16 weeks were roughly proportional to dose up to the highest dose (50 g.), the increase averaging 48 times the weight of drug given. This suggests that nematodes other than *Haemonchus* are also involved in preventing normal growth. Heavily and lightly infested lambs appeared to respond equally well. Drenches were apparently more effective than tablets against stomach worms only. Prof. Fisher has extended two existing statistical techniques in Appendices VI and VII. B.G.P.

- 121—CERECERO D., M. C., 1943.—"Algunos helmintos de las ratas domesticas y silvestres de México con descripción de dos nuevas especies." Tesis, México, 77 pp.

Cerecero catalogues the helminth parasites of wild and domestic rats in Mexico. There are two new species. *Euparyphium ochoterenai* n.sp. from *Rattus norvegicus* can be distinguished by the number of cephalic hooks and by the form of the testes. *Fibricola caballeroi* n.sp. also from *Rattus norvegicus* can be distinguished by the distribution of the yolk glands and by the structure of the anterior testis. She records 9 species in all. P.A.C.

- 122—* KOCK, P., 1943.—“Der Parasitenbefall des Rehwildes im Jagdkreise Höxter a.d. Weser.” Dissertation, Hannover.
- 123—* NICKEL, E. A., 1943.—“Vorkommen und Verbreitung der wichtigsten parasitären Arthropoden und Würmer des Menschen und der grossen Haussäugetiere in den Mittelmeerlandern und Afrika.” Dissertation, Hannover.
- 124—* SCHRICKE, O., 1943.—“Untersuchungen über die Wirkungsweise von Contraverm auf die Pferdestrongyliden und die Veränderungen des Strongylidenartenverhältnisses nach der Behandlung.” Dissertation, Hannover.
- 125—* WANTIA, W., 1943.—“Untersuchungen über die Wirksamkeit von Ciff-Kapseln als Mittel gegen Strongyliden.” Dissertation, Hannover.

* Original not available for checking or abstracting.